

What is claimed is:

5 1. A gas sensor comprising a cylindrical insulator having an element insertion hole extending from a proximal end to a distal end thereof, a gas sensing element airtightly fixed in said element insertion hole of the insulator, and a cylindrical housing having an inside space for placing said insulator, with an air side cover attached to a proximal end of said housing so as to confine an aerial atmosphere therein and a measured gas side cover attached to a distal end of said housing so as to confine a measured gas atmosphere therein, wherein

10 a sealing material is provided at one side of said element insertion hole for sealing a clearance between an inner surface of said element insertion hole and an outer surface of said gas sensing element, and

15 a cushion filler, having strength of 5N to 1,000N, is provided at the other side of said element insertion hole for sealing a clearance between an inner surface of said element insertion hole and the outer surface of said gas sensing element.

20 2. The gas sensor in accordance with claim 1, wherein a filling rate of said cushion filler provided between said inner surface of said element insertion hole and the outer surface of said gas sensing element is in the range from 10% to 80%.

25 3. The gas sensor in accordance with claim 1, wherein an injection port is provided near an open edge of said element insertion hole at the distal end of said insulator for facilitating a filling operation of said sealing material or said cushion filler.

30 4. The gas sensor in accordance with claim 1, wherein said element insertion hole comprises a larger-diameter portion and a smaller-diameter portion, and an inner diameter of said larger-diameter portion is larger than that of said smaller-diameter portion.

5. The gas sensor in accordance with claim 1, wherein said sealing material and/or said cushion filler is placed so as to fix at least two opposed surfaces of the inner surface of said element insertion hole and the outer surface of said gas sensing element.

6. A gas sensor comprising a cylindrical insulator having an element insertion hole extending from a proximal end to a distal end thereof, a gas sensing element airtightly fixed in said element insertion hole of the insulator, and a cylindrical housing having an inside space for placing said insulator, with an air side cover attached to a proximal end of said housing so as to confine an aerial atmosphere therein and a measured gas side cover attached to a distal end of said housing so as to confine a measured gas atmosphere therein, wherein

a sealing material is provided at one side of said element insertion hole for sealing a clearance between an inner surface of said element insertion hole and an outer surface of said gas sensing element,

a cushion filler, having strength of 5N to 1,000N, is provided at the other side of said element insertion hole for sealing a clearance between an inner surface of said element insertion hole and the outer surface of said gas sensing element,

said insulator constitutes a main body and a separate body attached via a spacer to a distal end of said main body, so that said element insertion hole extends across both of said main body and said separate body, and

said cushion filler is provided only in the element insertion hole of said separate body.